

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of Applicants:

Date: May 15, 2009

Brian S. Beaman et al.

Group Art Unit: 2829

Serial No.: 10/066,171

Examiner: William T. Leader

Filed: February 1, 2002

Docket No.: YOR919960186US2

For: PROBE STRUCTURE HAVING A PLURALITY OF DISCRETE INSULATED  
PROBE TIPS PROJECTING FROM A SUPPORT SURFACE, APPARATUS FOR USE  
THEREOF AND METHODS OF FABRICATION THEREOF

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**APPEAL BRIEF  
IN REPOSE TO FINAL REJECTION  
Dated 11/26/2008**

Sir:

Pursuant to 35 U.S.C. 134 and 37 C.F.R. 41.37, entry of this Appeal Brief in support of the Notice of Appeal filed March 26, 2009 in the above-identified matter is respectfully requested. This appeal is from the final rejection in the Office Action dated November 26, 2008, referred to herein as the Final Action. .

In compliance with the requirements of CFR 37 §41.37(c)(1)(i) to 37 CFR 37 §41.37(c)(1)(x) are the following Parts I to X, respectively.

**Part I**  
**CFR 37 §41.37(c)(1)(i)**  
**Statement of Real Party in Interest**

The real party in interest in the above-identified patent application is the International Business Machines Corporation, Armonk, New York.

**Part II**  
**CFR 37 §41.37(c)(1)(ii)**  
**Related Appeals and Interferences**

There are no related appeals or interferences.

**Part III**  
**Status of Claims**  
**CFR 37 §41.37(c)(1)(iii)**

1. No claims are allowed.
2. Claims 92 and 93 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 49, 81, 90, 91 and 96 are rejected under 35 U.S.C. 102(e) as being anticipated by Eldridge et al., (US 6,110,823) for the reasons given in the previous office action.
4. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Saruwatari et al., (US 5,233,011).
5. Claims 86, 88 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Nakata et al., (US 5,665,610).
6. Claims 50-60, 67-80, 82-85, 87, 89, 95 and 97-102 are withdrawn.
7. Cancelled claims: 1-48 and 61-65.

**Part IV**  
**CFR 37 §41.37(c)(1)(iv)**  
**Status of Amendments**

Applicants' Responses After Final Action dated 02/24/2009 and 02/25/2009 were not entered by Advisory Action dated 03/20/2009.

**Part V**  
**CFR 37 §41.37(c)(1)(v)**  
**Summary of Claimed Subject Matter**

There is only one independent claim, claim 49. Claim 49 is an originally filed claim and therefore provides support for itself.

Claim 49 is directed to a method providing a substrate having a surface and providing a plurality of elongated electrical conductors each having a first end and a second end. Each of the first ends are bonded to the surface so that the second ends are disposed away from the surface. A dielectric coating is formed on the elongated electrical conductors.

Support for claim 49 is found throughout the specification including in originally filed claim 49 and in Figs. 2-6 and Figs. 14-17. Figs. 2-6 are described at page 8, lines 8-9 and at page 20, second last line to page 12, five lines from the bottom. Figs. 14-17 are described at page 9, lines 6-7, and at page 15, line 15 to page 16, line 2.

**Part VI**  
**CFR 37 §41.37(c)(1)(vi)**  
**Grounds of Rejection to be reviewed on appeal**

1. Claims 49, 81, 90, 91 and 96 are rejected under 35 U.S.C. 102(e) as being anticipated by Eldridge et al., (US 6,110,823) for the reasons given in the previous office action.

2. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Saruwatari et al., (US 5,233,011).
3. Claims 86, 88 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Nakata et al., (US 5,665,610).

### **GROUPING OF THE CLAIMS FOR APPEAL**

1. Claims 49, 81, 90, 91 and 96 are appealed as a group.
2. Claim 66 is appealed alone as a group.
3. Claims 86, 88 and 94 are appealed as a group.

### **Part VII CFR 37 §41.37(c)(1)(vii) Argument**

#### ***Claim Rejections – 35 USC § 112 Second Paragraph***

Claims 92 and 93 are rejected under 35 USC 112, second paragraph. Applicants submitted an amendment to correct a typographical error in the claims which resulted in this rejection in the Amendment in response to Final Office Action dated February 24, 2009. The Examiner did not enter this amendment as indicated in the Advisory Action dated March 20, 2009 stating that it raised new issues. Applicants request the Board to review these claims as amended in Applicants' response dated February 24, 2009.

#### ***Claim Rejections - 35 USC §102***

Claims 49, 81, 90, 91 and 96 are rejected under 35 U.S.C. 102(e) as being anticipated by Eldridge et al (US 6,110,823). Applicants respectfully disagree and request reversal of this rejection. Eldridge et al. is not prior art under 35 USC 102 as described below. Thus the Examiner has not made out a prima facie case of anticipation by Eldridge et al. Thus Applicant's request reversal of this rejection.

### ***Claim Rejections - 35 USC §103***

#### ***Rejection of Claim 66 Under 35 USC §103***

Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US 6,110,823) in view of Saruwatari et al (US 5,233,011). Applicants respectfully disagree and request reversal of this rejection. Eldridge et al. is not prior art under 35 USC as described below. The Examiner identifies no teaching in Saruwatari by which a dielectric coating can be formed on an elongated electrical conductor for which each of the first ends are bonded "to said surface so that said second ends are disposed away from said surface," and "forming a dielectric coating on said elongated electrical conductors" as recited in claims 49 from which claim 66 depends. Thus the Examiner has not made out a prima facie case of obviousness. In view there of Applicant request the Board to reverse this rejection. In the last sentence of page 6 of the Final Office Action the Examiner states:

"It would have been obvious at the time the invention was made to have formed the dielectric insulation around the conductors of Eldridge from polyimide because polyimide has excellent mechanical and electrical properties as taught by Saruwatari et al."

Applicants disagree. The Examiner does not identify where Saruwatari et al. teaches how to form a polyimide coating on “elongated electrical conductors” wherein the first ends are bonded to a surface and the second ends “are disposed away from said surface” as recited in Claim 66 as it depend from Claim 49. Thus the statement from the Final Action quoted above in conclusory. A conclusory statement cannot support a rejection based on obviousness. Saruwatari, et al. teaches an extrusion process to coat a wire with polyimide. The Examiner does not explain how such a process can be used in the methods of claim 49 or 66. Thus the Examiner has not made out a prima facie case of obviousness. In view thereof, Applicants request the Board to reverse this rejection.

#### ***Rejection of Claims 86, 88 and 94 Under 35 USC §103(a)***

Claims 86, 88 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US 6,110,823) in view of Nakata et al. (US 5,665,610). Applicants respectfully disagree and request reversal of this rejection. Claims 86, 88 and 94 depend directly or indirectly from claim 49. Eldridge et al. is not prior art under 35 USC as described below and thus the Examiner has not made out a prima facie case of obviousness. In addition Nakata et al. does not provide the teaching missing in Eldridge et al for how to form a dielectric coating on “elongated electrical conductors” wherein the first ends are bonded to a surface and the second ends “are disposed away from said surface” as recited in Claims 86, 88 and 94 as it depend from Claim 49. Thus the Examiner has not made out a prima facie case of obviousness of claims 86, 88 and 94 over Eldridge et al (US 6,110,823) in view of Nakata et al. (US 5,665,610). In view thereof Applicants request the Board to reverse the Examiner’s rejection of claims 86, 88 and 94 under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US 6,110,823) in view of Nakata et al. (US 5,665,610).

#### ***Examiner’s Response to Applicants’ Arguments***

The Final Action (OA) states at page 8:

Applicant's arguments filed April 3, 2006, have been fully considered but they are not persuasive. At page 21 of the response, applicant argues that Eldridge has no teaching of any method of forming a dielectric coating on elongated conductors. As pointed out in the previous office action, such a teaching is found in figure 10K... A layer of dielectric material (1094) is applied to flexible, elongated wire 1086 (column 67, lines 55-59).

Eldridge Col 67, lines 55-59, states:

A layer 1094 of dielectric material (such as silicon dioxide) is applied over the nickel layer 1092. The dielectric material (1094) may encompass (not shown) the contact pad 1088 to assist in anchoring the wire stem thereto.

Eldridge Col 67, lines 55-59, provides no teaching of how the dielectric material can be applied over the nickel layer 1092. Thus there is no enablement for this process and consequently no enablement for the structure of Eldridge figure 10k.

MPEP Section 2121.01 entitled "Use of Prior Art in Rejections Where Operability Is in Question" states:

"In determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure' ...." *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; **mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation.** *Elan Pharm., Inc. v. Mayo Found. For Med. Educ. & Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003) .... A reference contains an "enabling disclosure" if the public was in possession of the claimed invention before the date of invention. "Such possession is effected if one of ordinary skill in the art could have combined the publication's description of the invention with his [or her] own knowledge to make the claimed invention." *In re Donohue*, 766 F.2d 531, 226 USPQ 619 (Fed. Cir. 1985). (Emphasis added)



Since Eldridge provides no description of how to make the structure of Eldridge Fig. 10k, it is insufficient "mere naming or description of the subject matter."

The Examiner has not shown "if the public was in possession of the claimed invention before the date of invention" by Applicants and thus the Examiner has not made out a prima facie showing that Eldridge is prior art under 35 USC 102. In Applicants' response dated Feb. 24, 2009 Applicants requested that the Examiner

1. as required by 37 CFR104(d)(2) provide documentary evidence that a person of ordinary skill in the art was in possession of how to practice the mere description of Eldridge Col 67, lines 55-59, without relying on Applicants' invention and without undue experimentation, or
2. as required by 37 CFR 104(d)(2), in the absence of providing such documentary evidence, to provide and Examiner's affidavit qualifying the Examiner has having sufficient expertise to provide how to practice the mere description of Eldridge Col 67, lines 55-59, without relying on Applicants' invention and without undue experimentation, or
3. withdraw all the prior art rejections since the Examiner has not made out a prima facie showing that Eldridge is prior art under 35 USC 102 to applicants invention.

Since in the Advisory Action dated 3/20/2009 the Examiner has not proved what was requested in items 1 and 2 above, the Examiner has not established that Eldridge is prior art under 35 USC 102.

In the Advisory Action dated 3/20/2009 at page 2:

- The Examiner states: "[a]s stated in MPEP 2121 1, prior art is presumed to be operable/enabling." This is incorrect. The Examiner does not identify what part of

MPEP 2121 1 supports this assertion. There is in fact none. There is no such presumption in the statutory or decisional law.

- The Examiner states: "The burden is on applicant to provide facts rebutting the presumption of operability." The Examiner does not identify what part of MPEP 2121 1 supports this assertion. There is in fact none. There is no such burden in the statutory or decisional law. It is the Examiner's burden to show that a cited reference is prior art under 35 USC 102. The Examiner has not done that here.
- The Examiner states: "One of ordinary skill in that art would have recognized that the dielectric material could have been applied by a coating process, and would have been capable of performing such a coating process without undue experimentation." Applicants disagree. Since there are no facts to support this assertion offered by the Examiner, this is a conclusory assertion which cannot provide the missing enabling disclosure in Eldridge. As stated above Applicants requested that the Examiner provide evidence as required by 37 CFR104(d)(2). Since the Examiner has not provided the requested evidence, the Examiner's assertion is unsupported and not a fact. Thus the Examiner has not met his burden to show that Eldridge is prior art to Applicants claimed invention.

## **CONCLUSION**

Applicant request the Board to reverse the Examiner's rejections:

1. of Claims 49, 81, 90, 91 and 96 under 35 U.S.C. 102(e) as being anticipated by Eldridge et al., (US 6,110,823) for the reasons given in the previous office action.
2. of Claim 66 under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Saruwatari et al., (US 5,233,011).
3. of Claims 86, 88 and 94 under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al., (US 6,110,823) in view of Nakata et al., (US 5,665,610).

## **Part VIII**

### **APPENDIX CLAIMS**

Claim 1. – 48 (Canceled)

Claim 49. (Rejected)      A method comprising providing a substrate having a surface;

providing a plurality of elongated electrical conductors each having a first end and a second end;

bonding each of said first ends to said surface so that said second ends are disposed away from said surface;

forming a dielectric coating on said elongated electrical conductors.

Claim 50. (Withdrawn) A method according to claim 49 further including forming a coating of an electrically conductive material on said dielectric coating.

Claim 51. (Withdrawn) A method comprising: providing a substrate having a surface, said surface having a plurality of elongated electrical conductors each having a first end and a second end, each a said first ends being affixed to said surface, each of said second ends being disposed away from said surface; coating said second ends with a first material leaving an uncoated portion of said plurality of elongated conductors; coating said elongated conductors with a dielectric material.

Claim 52. (Withdrawn) A method according to claim 51 further including disposing on said dielectric material a layer of electrically conductive material.

Claim 53. (Withdrawn) A method according to claim 52 wherein said layer of electrically conductive material is deposited by a method selected from the group consisting of electroless plating, electrolytic plating, electrophoretic deposition and sputtering.

Claim 54. (Withdrawn) A method according to claim 53 further including removing said first material to expose said elongated conductor at said second end.

Claim 55. (Withdrawn) A method comprising:

providing a substrate having a surface, said surface having a plurality of elongated electrical conductors each having a first end and a second end,

each a said first ends being affixed to said surface, each of said second ends being disposed away from said surface;

disposing said substrate in a container containing a solution so that said second ends are not disposed in said solution; said solution being a solution from which a dielectric material can be electrochemically deposited onto an electrically biased surface;

applying an electrical bias to said plurality Of elongated electrical conductors to dispose on that portion of each of said elongated electrical conductors emersed in said solution a dielectric coating.

Claim 56. (Withdrawn) A method according to claim 55 further including disposing said substrate in a second solution from which an electrically conductive material can be electrochemically deposited so that said dielectric coating is emersed in said second solution, applying a bias to said elongated electrical conductors to coat said dielectric material with an electrically conductive material.

Claim 57. (Withdrawn) A method according to claim 55 wherein said dielectric material is an electroactive material.

Claim 58. (Withdrawn) A method comprising: providing a substrate having a surface, said surface having a plurality of elongated electrical conductors each having a first end and a second end, each a said first ends being affixed to said surface, each of said second ends being disposed away from said surface;

coating said second ends with a first material leaving an uncoated portion of said plurality of elongated conductors; disposing said substrate in a container containing a solution;

said solution being a solution from which a dielectric material can be electrochemically deposited onto an electrically biased surface;

applying an electrical bias to said plurality of elongated electrical conductors to dispose on that portion of each of said elongated electrical conductors emersed in said solution a dielectric coating.

Claim 59. (Withdrawn) A method according to claim 58 further including disposing said substrate in a second solution from which an electrically conductive material can be

electrochemically deposited so that said dielectric coating is emersed in said second solution, applying a bias to said elongated electrical conductors to coat said dielectric material with an electrically conductive material.

Claim 60. (Withdrawn) A method according to claim 59 further including removing said first material to expose said elongated conductor at said second end.

Claim 61. – 65 (Canceled)

Claim 66. (Rejected) A method according to claim 49 wherein said dielectric coating is selected from the group consisting of polyimides, polyamide-imides, paralynes, polysiloxanes, epoxies, polyurathanes, perfluorinated polymers, and polypropylenes.

Claim 67. (Withdrawn) A method according to claim 50 wherein said coating of an electrically conductive material is selected from the group consisting of Cu, Au, Ag, Pt, Pd, Ni and combinations thereof.

Claim 68. (Withdrawn) A method according to claim 50 further including means for electrically interconnecting said electrically conductive coating on at least a part of said plurality of elongated electrical conductors.

Claim 69. (Withdrawn) A method according to claim 68 wherein said means for electrically interconnecting at least a part of said plurality of elongated electrical conductors is an electrically conductive coating disposed on at least a part of said surface.

Claim 70. (Withdrawn) A method according to claim 67 wherein said electrically conductive coating on said plurality of elongated conductors and electrically coating on said surface are a substantially continuous coating.

Claim 71. (Withdrawn) A method according to claim 70 wherein said substantially

continuous coating is selected from the group consisting of a sputter deposited coating, a plasma deposited coating, an electrolytically deposited coating, an electrolessly deposited coating, and electrophoretically deposited coating.

Claim 72. (Withdrawn) A method according to claim 49 further including a means for maintaining said plurality of said second ends in substantially fixed positions with respect to a reference position.

Claim 73. (Withdrawn) A method according to claim 49 or 50 wherein said first end is affixed to said surface at an electrical contact location.

Claim 74. (Withdrawn) A method according to claim 72 wherein said means for maintaining is a sheet or material having a plurality of openings therein through which said second ends project.

Claim 75. (Withdrawn) A method according to claim 72 wherein said means for maintaining further including means for electrically interconnecting said electrically conductive coating on at least a part of said plurality of elongated electrical conductors.

Claim 76. (Withdrawn) A method according to claim 49 wherein said second end has a protuberance thereat.

Claim 77. (Withdrawn) A method according to claim 74 wherein said sheet is formed from a material selected from the group consisting of a rigid material and a compliant material.

Claim 78. (Withdrawn) A method according to claim 74 wherein said sheet comprises a sheet of electrically conductive material having a plurality of through holes therein, said sheet of material contains a dielectric material to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of electrically conductive material.

Claim 79. (Withdrawn) A method according to claim 74 wherein said sheet is spaced apart from said surface by a flexible support.

Claim 80. (Withdrawn) A method according to claim 79 wherein said flexible support is selected from the group consisting of a spring and an elastomeric material.

Claim 81. (Rejected) A method according to claim 49 wherein said elongated electrical conductors have a shape selected from the group consisting of linear, piece wise linear, curved and combinations thereof.

Claim 82. (Withdrawn) A method according to claim 79 wherein said sheet and said flexible support form a space containing said plurality of elongated electrical conductors.

Claim 83. (Withdrawn) A method according to claim 82 wherein said space is filled with a flexible material.

Claim 84. (Withdrawn) A method according to claim 83 wherein said flexible material is an elastomeric material.

Claim 85. (Withdrawn) A method according to claim 78 wherein said sheet has a top surface and a bottom surface and said through holes have a sidewall, said dielectric material coats said top surface and said bottom surface and said sidewall.

Claim 86. (Rejected) A method according to claim 49 wherein said plurality of elongated electrical conductors are distributed into a plurality of groups.

Claim 87. (Withdrawn) A method according to claim 50 wherein said plurality of elongated electrical conductors are distributed into a plurality of groups.



Claim 88. (Rejected) A method according to claim 86 wherein said plurality of groups are arranged in an array.

Claim 89. (Withdrawn) A method according to claim 87 wherein said plurality of groups are arranged in an array.

Claim 90. (Rejected) A method according to claim 49 wherein said method that forms a probe for an electronic device.

Claim 91. (Rejected) A method according to claim 90 wherein said electronic device is selected from the group consisting of an integrated circuit chip and a packaging substrate.

Claim 92. (Rejected) A method according to claim 92 wherein each of said groups corresponds to an integrated circuit chip on a substrate containing a plurality of said integrated circuit chips.

Claim 93. (Rejected) A method according to claim 92 wherein said substrate containing said plurality of integrated circuit chips is a wafer of said integrated circuit chips.

Claim 94. (Rejected) An apparatus for using the method formed by the method of claim 49 to test an electronic device comprising:

for holding said method formed by the method of claim 49, means for retractably moving said method formed by the method of claim 49 towards and away from said electronic device so that said second ends contact electrical contact locations on said electronic device, and applying electrical signals to said elongated electrical conductors.

Claim 95. (Withdrawn) An apparatus for using the method formed by the method of claim 50 to test an electronic device comprising:

holding said method of claim 50, retractably moving said structure formed by the method of claim 50 towards and away from said electronic device so that said second ends contact electrical contact locations on said electronic device, and

applying electrical signals to said elongated electrical conductors.

Claim 96. (New) A method according to claim 49 or 50 wherein there is a protuberance at said second end.

Claim 97. (Withdrawn) A method according to 74 wherein said sheet comprises a sheet of electrically conductive material having a plurality of first through holes therein, and a sheet of dielectric material having a plurality of second through holes therein, said first through holes are aligned with said second through holes, said first through holes have a smaller diameter than said second through holes to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of electrically conductive material.

Claim 98. (Withdrawn) A method according to claim 97 wherein sheet or electrically conductive material has a first side and a second side, said sheet of dielectric material is disposed on either of said first side and said second side of said sheet of electrically conductive material.

Claim 99. (Withdrawn) A method according to claim 97 where there is disposed on said first side and said second side of said sheet of electrically conductive material a layer of said dielectric material.

Claim 100. (Withdrawn) A method according to claim 74 wherein said sheet comprises a sheet of rigid material having a plurality of through holes therein, said sheet contains a dielectric material to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of rigid material.

Claim 101. (Withdrawn) A method according to claim 74 wherein said sheet comprises a sheet of dielectric material having a plurality of through holes therein, said sheet contains a sheet of a rigid material disposed in contact with said sheet of dielectric material, said sheet of rigid material has an opening therein exposing a plurality of said through holes to provide a means for support of said dielectric material.

Claim 102. (Withdrawn) A method according to claim 101 wherein said sheet is spaced apart from said surface by a flexible support, said sheet of rigid material is disposed on said flexible support.

**PART IX**  
**CFR 37 § 41.37(c) (1) (ix)**  
**SECTION 1**

**Evidence Appendix**

There is no evidence relied on

**Part X**  
**Related Proceeding Appendix**

No related proceeding.

Please charge deposit account no. 09-0468 any fee necessary to enter this or any previously submitted paper.

Respectfully submitted,

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